

REMARKS

Claims 38, 45-48, and 59 have been canceled without prejudice to continued prosecution. Claims 23, 29, and 37 have been amended. In claims 23 and 29, "gene" was replaced with "coding sequence." Claims 23 and 29 also were amended to recite that the mutation is the substitution of a Lys residue for Asp/Glu. Support for the claim amendments can be found, for example, at page 12, line 37 through page 13, line 3, and at page 28, lines 7-21 of the specification. Claim 37 was amended for grammatical clarity.

The specification at page 28, lines 11 and 12 was amended to clarify that the lysine residue is substituted for the glutamic acid residue. Support for this amendment is found on page 28, line 11, which specifies that the codon was changed from GAG to AAG. GAG encodes glutamic acid and AAG encodes lysine. No new matter has been added. Applicants respectfully request entry of the above amendments, which raise no new issues that require further consideration and/or search, and which place the application in better condition for allowance.

Drawings

The Examiner objected to the drawings because the figure labels were illegible and should be replaced with computer generated text. Formal drawings are enclosed herewith.

Claim Objection -

The Examiner objected to claim 38 as being of improper dependent form. Claim 38 has been canceled.

Rejections under 35 U.S.C. § 112, first paragraph

The Examiner rejected claims 23, 25, 29, 37-44, and 49-58 under 35 U.S.C. § 112, first paragraph, for lack of written description. The Examiner asserted that "disclosure of a single sequence (i.e., a single amino acid residue charge at a particular location) does not adequately describe a gene, per University of California (*See University of California v. Eli Lilly and Co.*, 119 F.3d 1559; 43 USPQ2d 1398, 1406 (Fed. Cir. 1997))." The Examiner also asserted that "claims 23, 29, 37, and 38 are broadly drawn to any mutation at the prescribed amino acid positions that eliminate delta-12 desaturase activity and since Applicant teaches only one example of the claimed genus, the requirements of University of California are not met."

While Applicants disagree with the Examiner's rejection, claim 23 has been amended to recite that the coding sequence encodes a delta-12 desaturase protein in which a lysine residue is substituted for Asp/Glu in the His(Asp/Glu)CysGlyHis conserved sequence. The Examiner is requested to withdraw the rejection of claims under 35 U.S.C. §112, first paragraph, for lack of written description.

The Examiner rejected claims 23, 25, 29, 37-44, and 49-58 under 35 U.S.C. §112, first paragraph, for lack of enablement. The Examiner asserted that the "examples of the specification do not teach how to make any mutations that would result in the desired product" and the "specification does not provide guidance for making the predictable changes to the claimed sequence that would result in a functional embodiment of the claimed invention."

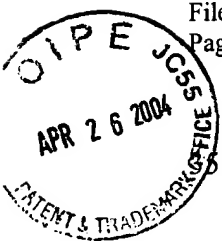
Claim 38 has been canceled. Claim 23 has been amended to recite that the coding sequence encodes a delta-12 desaturase protein in which a lysine residue is substituted for Asp/Glu in the His(Asp/Glu)CysGlyHis conserved sequence. The specification enables one of ordinary skill in the art to practice the methods of claims 23, 25, 37, 39-44, and 49-58 and make and use the recombinant nucleic acid construct of claim 29. In particular, the specification provides the amino acid sequences of delta-12 desaturases and indicates that sequence modifications are routine to one of skill in the art. See, e.g., page 12, lines 14-16 of the specification. The specification also provides detailed guidance for generating recombinant nucleic acid constructs and introducing such constructs into plants. See, e.g., page 18, line 28 through page 19, line 6, page 20, line 33 through page 26, line 22 of the specification. Thus, the specification enables one of ordinary skill to practice the claimed methods and make and use the claimed recombinant nucleic acid construct without undue experimentation.

The Examiner asserted that the specification is lacking guidance for using the method of claim 23 for both increasing and decreasing the fatty acid composition of a seed. Amended claim 23 recites that the method is for increasing the oleic acid content in plant seeds.

The Examiner asserted that "Applicant has not responded to the enablement rejection with respect to the unpredictability in making amino acid substitutions at a particular site in a protein that completely eliminate activity as described in Kallis R. et al., Plant Physiology, July 2000, Vol. 128; pp. 1077-1086." Amended claim 23 recites that the mutation is the substitution of a Lys residue for Glu/Asp in a particular conserved sequence.

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In view of the above remarks, the Examiner is requested to withdraw the rejection under 35 U.S.C. §112, first paragraph, for lack of enablement.

Rejections under 35 U.S.C. §112, second paragraph

The Examiner rejected claims 23, 35, 37-44, and 49-58 under 35 U.S.C. § 112, second paragraph, as being indefinite. The Examiner asserted that recitation of "altered" in claim 23 was unclear and that the claim was missing an expression step. The Examiner also asserted that recitation of "gene" was indefinite throughout the claims.

The term "gene" has been replaced with "coding sequence" throughout the claims. Claim 23 has been amended to recite that the method is for increasing the oleic acid content in plant seeds. Amended claim 23 also recites that the coding sequence encodes a delta-12 desaturase fatty acid product having a mutation in a conserved sequence. Thus, claims 23, 35, 37-44, and 49-58 are sufficiently definite. The Examiner is requested to withdraw the rejections under 35 U.S.C. §112, second paragraph.


CONCLUSION

In light of the above, Applicants respectfully request allowance of claims 23, 25, 29, 37, 39-44, and 49-58. The Examiner is invited to telephone the undersigned agent if such would further prosecution.

No extension fees are due as this response is being filed before the end of the shortened statutory period. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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